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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/809,833	03/26/2004	Claire Barroux	612.43683X00	7951
20457 7590 04/19/2007 ANTONELLI, TERRY, STOUT & KRAUS, LLP 1300 NORTH SEVENTEENTH STREET SUITE 1800 ARLINGTON, VA 22209-3873			EXAMINER CRAIG, DWIN M	
			ART UNIT 2123	PAPER NUMBER
SHORTENED STATUTORY PERIOD OF RESPONSE		MAIL DATE	DELIVERY MODE	
3 MONTHS		04/19/2007	PAPER	

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/809,833

Applicant(s)

BARROUX, CLAIRE

Examiner

Dwin M. Craig

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01 February 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-13 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. Claims 1-13 have been presented for reconsideration based on Applicants' amended claim language and arguments.

Response to Arguments

2. Applicants' responses provided in the 2/1/2007 communication have been fully considered; the Examiner's response is as follows.

2.1 Regarding the claim objections, the Examiner thanks the Applicants for amending the claims and the abstract and hereby withdraws the earlier objections to the claims and the abstract.

2.2 Applicants' arguments regarding the 35 U.S.C. 101 rejections of claim 1-13 have not been persuasive.

Applicants' have argued that the current claims have a concrete, useful and tangible result as required by 35 U.S.C. 101, the Examiner respectfully traverses Applicants' argument. The current claims fails to teach a *tangible* result, there is no disclosure of the claimed *determination the at least three-constituent composition* is conveyed into the real world. Further and in regards to the claimed subject matter, the current claims disclose mathematical steps, the claimed mathematical steps are abstract and therefore lack a practical application of a judicial exception (*law of nature, abstract idea, naturally occurring article/phenomenon*) and therefore the claims are not directed towards statutory subject matter. In regards to Applicants' arguments regarding the specification disclosing a useful result by accelerating calculations during a simulation of production of underground hydrocarbon reservoirs, *see page 8 of the 2/1/2207 responses*, the Examiner agrees that the current claims have a *useful* result, however, the current claims are describing *non-statutory subject matter* because they describe abstract ideas.

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2.3 Regarding Applicants' response to the 102(b) rejections of claims Applicant argued on page 11 of the 2/1/2007 responses, *At page 8, lines 4-5 of the Office Action, it is indicated that "the examiner is mapping the property of viscosity to Applicants' V component...." However, V is not a property according to the present invention: rather, V is a constituent.*

The Examiner has found this argument to be persuasive and withdraws the previously applied 35 U.S.C. 102(b) rejections of claim 1.

Claim Rejections - 35 USC § 101

35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

3. Claims 1-13 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

Claims 1-13 are directed towards a method comprising a series of steps for manipulation of datum that is then organized and compared via specified criteria equivalent to mere manipulation of an abstract construct. Applicant is reminded that abstract constructs are not statutory subject matter under 35 USC 101.

The method claims are not statutory as any computer-implemented method must produce a result, which is concrete, tangible and useful. As set forth in MPEP 2106(IV)(B):

"In practical terms, claims define nonstatutory processes if they:

-consist solely of mathematical operations without some claimed practical application (i.e., executing a "mathematical algorithm"); or

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-simply manipulate abstract ideas, e.g. a bid (Schrader; 22 F.3d at 293-94, 30 USPQ2d at 1458-59) or a bubble hierarchy (Warmerdam, 33 F.3d at 1360, 31 USPQ2d at 1759), without some claimed application.”

As the claims in the instant application recite steps to manipulate data, (claim 1 for example, *estimating the properties or the behavior of liquid and/or vapor hydrocarbon phases from data relative to a reference set*) the claimed method does not produce a tangible, useful result, claims 1-13 do not recite statutory subject matter further, merely grouping and determining the separation of products does not teach a composition of matter, it is disclosing only a method of organizing data, which does not disclose a concrete, useful and tangible result.

As set forth in MPEP 2106 (IV)(B)(2)(b)(ii):

“A claim is limited to a practical application when a method, as claimed, produces a concrete, tangible and useful result; i.e., the method recites a step of act of producing something that is concrete, tangible and useful result (as in *State Street*, 149 F.3d at 1373, 47 USPQ2d at 1601) and/or when a specific machine is being claimed (as in *Alappat*, 33 F.3d at 1544, 31 USPQ2d at 1557 (in banc)). For example, a computer process that simply calculates a mathematical algorithm that models noise is nonstatutory.

The MPEP § 2106 (IV)(B)(2)(b)(ii) states the following example:

A computer process that simply calculates a mathematical algorithm that models noise is nonstatutory. However, a claimed process for digitally filtering noise employing the mathematical algorithm is statutory.

Comparing the above discussion to claims 1-13, the claimed method merely creates a grouping of chemicals being mixed together...*grouping each one of said hydrocarbon mixtures into at least three constituents...* and then determining a first and second

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constituent...*determining by material balance the compositions of the separation products comprising, for the gaseous products, at least a first and second constituent...* and then a determination is made as to the composition of a mixture to create a reference set...*determining the at least three-constituent composition of each hydrocarbon mixture of the reference set by combination of the products of the separation thereof in proportion to the amounts of each separation product.* As claimed the method steps describe a series of operations to manipulate a symbolic representation of chemical compounds and liquid mixtures and therefore merely disclose a manipulation and ordering of data with no concrete, tangible and useful result.

As set forth in MPEP § 2106 (IV)(B)(2)(b)(i)

“Examples of claimed processes that do not achieve a practical application include:

- step of “updating alarm limits” found to constitute changing the number value of a variable to represent the result of the calculation (Parker v. Flook, 437 U.S. 584, 585, 198 USPQ 193, 195 (1978));
- final step of “equating” the process outputs to the values of the last set of process inputs found to constitute storing the result of calculations (In re Gelnovatch, 595 F.2d 32, 41 n.7, 201 USPQ 136, 145 n.7 (CCPA 1979); and
- step of “transmitting electrical signals representing” the result of calculations (In re De Castelet, 562 F.2d 1236, 1244, 195 USPQ 439, 446 (CCPA 1977) (“That the computer is instructed to transmit electrical signals, representing the results of its calculations, does not constitute the type of post solution activity’ found in Flook, [437 U.S. 584, 198 USPQ 193 (1978)], and does not transform the claim into one for a process merely using an algorithm. The

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final transmitting step constitutes nothing more than reading out the result of the calculations.”));

and

-step of displaying a calculation as a gray code scale (In re Abele, 684 F.2d 902, 908, 214 USPQ 682, 687 (CCPA 1982)).”

Comparing the above examples to claims 1-13, the claimed method merely performs determinations and groupings and more closing resembles the example of comparing process outputs, which as shown does not result in a practical application.

Claims 1-13 fail to teach or disclose even the storing in a memory or the display of the *reference set*. It is noted that a claim may be statutory when it identifies the physical structure of manufacture in terms of its hardware, or a hardware software combination. Claims 1-13 do not recite any physical or hardware limitations, as set forth above. It is also noted that a claim directed to a product that has a practical application in the arts may be statutory; e.g. a computer comprising a program that produces a concrete, tangible and useful result, as decided in Alappat (31 USPQ2d 1557) and State Street (47 USPQ2d 1601). As set forth above, the claimed method does not produce a concrete, tangible and useful result, therefore the method comprising grouping of fluids or mixtures and determining compositions and different constituents and then determining a composition mixture fails to disclose a useful, concrete and tangible result and further fails to disclose a combination of matter such that the disclosed teachings of the claimed subject matter are directed towards statutory subject matter.

Therefore, claims 1-13 are considered to be non-statutory subject matter.

Possible Allowable Subject Matter

4. Any indication of allowability of the claims rejected under 35 USC 101, but not on prior art is being held in abeyance pending the manner in which applicant amends or responds to this rejection under 35 U.S.C. 101.

Conclusion

5. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

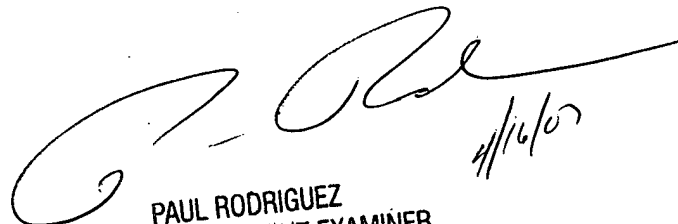
5.1 Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dwin M. Craig whose telephone number is (571) 272-3710. The examiner can normally be reached on 10:00 - 6:00 M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Paul L. Rodriguez can be reached on (571) 272-3753. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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4/16/07
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